

CHAPTER

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**Variation in private-sector  
payment rates**

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# Variation in private-sector payment rates

## Chapter summary

In this chapter, we examine how payment rates in the private sector vary across and within geographic areas. There are a number of reasons for studying such variation as it relates to Medicare payment policy. A better understanding of the dynamics of private health care markets can inform the development of Medicare payment policies. Questions of particular interest are: to what extent do factors such as the market power of providers or insurers affect the variation in private-payment rates and, if those are major factors that explain the variation, what does that mean for Medicare payment policy and policies that are intended to promote greater integration among providers?

In a preliminary analysis of private-sector payment rates for hospital and physician services, we find wide variation in payment rates geographically for both types of services, with greater differences for hospital services. Payment rates for some physician services—certain imaging services, for example—vary more across areas than payment rates for office visits and obstetric care. In a given area, payment rates for some types of physician services have more variation than payment for other types of physician services. We also found no strong pattern of correlation between rates for physician services and those for hospital services; that is, areas with relatively high rates for physician services do not necessarily have high rates for hospital services and vice versa.

## In this chapter

- Introduction
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- Variation in private-payment rates by metropolitan area
- Next steps

In future work, we plan to explore the reasons for variation in payment rates. Factors such as the health care market structure in a geographic area and relative power of providers or insurers are likely to affect the payment negotiation process and the resulting payment rates. The exact nature of the relationship between market characteristics and variation in rates is likely to be complex. We plan to continue our data analysis and undertake a more in-depth look at specific markets. We will also seek alternative ways to measure provider and insurer market power and market concentration to examine their effect on variation in private-payment rates. ■

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## Introduction

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The Commission has examined payment rates for physician and hospital services by private payers in different contexts. Each year, the Commission analyzes private insurer fees for physician services in the context of evaluating the adequacy of Medicare payment rates. Our last reported ratio of Medicare rates to private-payer rates for physician services, based on 2009 data, was 0.80 (Medicare Payment Advisory Commission 2011a). That is, private payers were paying nationally an average of 25 percent more than Medicare for physician services in 2009. We did not find that the difference between Medicare and commercial payment rates appreciably affected access to physician services for Medicare beneficiaries. Overall, we found that most beneficiaries were able to get timely appointments.

Similarly, Medicare payments for hospital services in recent years have been below the levels paid by private payers, and hospitals' Medicare margins—their profitability expressed as the relationship between their payments and costs—have been lower than their private-sector margins. Some have argued that providers need higher payment rates from private payers to compensate for the differential between their costs and Medicare payment rates (i.e., “cost shifting” is necessary). However, the Commission's recent work suggests that the level of hospitals' Medicare margins is associated with the extent to which private payers' rates put financial pressure on hospitals to be efficient. Hospitals under financial pressure from private payers have lower costs and higher Medicare margins than hospitals with higher private-payer rates (Medicare Payment Advisory Commission 2010). If private-payer rates continue to increase, there is a risk that the widening differential between private and Medicare rates will be interpreted as a need for Medicare to increase its rates rather than as a reflection of private-sector market dynamics.

In one context, private-sector prices are directly relevant to the Medicare program. Under the Medicare Advantage program, plans pay for medical services on the basis of prices they negotiate with providers. Therefore, their payment rates for the same services can differ from one provider to another, in contrast to Medicare fee-for-service prices, which are set by formulas in law and regulation.

While the Commission's analyses to date have focused on how Medicare payment rates compare with private-payer rates, this analysis examines how payment rates in the private sector vary across and within geographic areas.

There are a number of reasons for studying such variation as it relates to Medicare payment policy. Questions of particular interest are: to what extent do factors such as the market power of providers or insurers affect the variation in private-payment rates and, if those are major factors that explain the variation, what does that mean for Medicare payment policy and policies that are intended to promote greater integration among providers?

Providers can exert market leverage in several ways when negotiating prices with insurers and health plans. They can consolidate through horizontal integration (e.g., two hospitals merging to create a single hospital system in a market) or through vertical integration (e.g., hospitals employing physicians). When such combinations achieve market power for the providers, insurers risk not having key providers in their networks if they do not accept the providers' contracting terms. Similarly, when insurers are dominant in the market, they can negotiate with providers and obtain favorable terms (i.e., lower prices for services). Such market dynamics between insurers and providers might contribute to the observed geographic variation in expenditures and will affect the differential between Medicare and private-payer rates.

The gap between Medicare and private-payment rates does not necessarily imply that Medicare rates are set incorrectly, especially when higher private-payer rates reflect market conditions rather than differences related to cost and quality. It is possible that some providers would stop seeing Medicare beneficiaries if private-sector rates were much higher than Medicare rates. However, the supply of privately insured patients is not unlimited, nor is the ability to negotiate even higher private-sector prices. Providers may find it financially advantageous to continue seeing Medicare patients despite a differential in payments.

Generally, we observe many different payment rates in the private sector for a given service in an area for various reasons. Consequently, it is difficult to know which payment rate may serve as a meaningful reference rate for Medicare payment adequacy. If high private-payment rates enable providers to be less efficient in the absence of financial pressure, then the comparison of Medicare and private-payer rates is not meaningful. Gaining a better understanding of how and why private-payment rates vary can inform the Commission's work on payment policy and issues related to the organization of health care delivery.

Provider integration not only leads to market power but can also promote more coordinated, efficient care. Vertical integration can lead to less fragmentation of care across

different settings, and it allows for the effective alignment of financial incentives among diverse providers. Examples of this type of integration include the Kaiser and Geisinger models, among others. In this vein, Medicare policies that encourage greater integration of care—such as accountable care organizations—can also lead to greater market power and give providers the ability to negotiate higher payment rates from private payers. In the Commission’s ongoing efforts to encourage delivery system reform, it is useful to understand the potential effects of Medicare payment policy on the health care market beyond the Medicare program.

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## **Other research on geographic variation in payment rates**

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In a 2005 report, the Government Accountability Office (GAO) found that preferred provider organization (PPO) plans in the Federal Employees Health Benefits (FEHB) Program had substantially different payment rates for hospital inpatient services and physician services across metropolitan statistical areas (MSAs) (Government Accountability Office 2005). Using claims data from several large national insurers participating in the FEHB Program in 2001, GAO found a twofold difference in physician payment rates across 319 MSAs and an almost fourfold difference in hospital payment rates across 232 MSAs. (This study’s results were limited to MSAs for which there were sufficient claims data to evaluate relative payments.) In addition, the variation was affected by market characteristics: Higher payment rates were associated with a greater concentration in the hospital market and with smaller shares of primary care physicians paid on a capitated basis. GAO also found that physician payment rates were lower in areas with higher rates of the uninsured and lower Medicaid payments, but hospital payment rates did not show such a relationship. GAO did not find evidence of cost shifting, in which providers raise private-sector prices to compensate for lower Medicare or Medicaid payments.

Other research shows that even in a single geographic area, insurers’ payments to providers for the same or similar services can vary widely. In a 2010 study, the Attorney General of the Commonwealth of Massachusetts investigated insurers’ payments to hospitals and physician groups in Massachusetts (Attorney General of the Commonwealth of Massachusetts 2010). The variation in payments made by two major insurers to hospitals in

2008—after accounting for volume, product mix, service mix, and other factors—showed a 300 percent difference in payments between the lowest paid and the highest paid network hospitals. A similar analysis of payments made to physician groups showed a difference of up to 130 percent. The report concluded that payment variations were not correlated with quality of care, case mix, payer mix, or academic status. However, they were correlated with market leverage factors, such as provider size and the share of the insurer’s revenues going to the provider group.

The payment variations found in Massachusetts can result from various contracting practices. The attorney general’s report identified several practices that “exemplify a contracting dynamic that obscures transparency, perpetuates market leverage, and prioritizes competitive position (parity) over consumer value” (Attorney General of the Commonwealth of Massachusetts 2010).

Various strategies used by providers to negotiate higher payment rates from private insurers are documented in a recent study of six California markets (Berenson et al. 2010, California Healthcare Foundation 2009). In 2008, the Center for Studying Health System Change (HSC) conducted site visits to Fresno, Los Angeles, Oakland/San Francisco, Riverside/San Bernardino, Sacramento, and San Diego. The study reported the shift of negotiating power from insurers to hospitals and physicians, and it identified various ways market power is achieved and exercised. For instance, consolidation of hospitals into larger systems, especially those including “must-have” hospitals (e.g., prestigious hospitals that consumers want included in plan networks), and tighter relationships between hospitals and physicians have resulted in larger, more powerful negotiating entities and the growing clout of providers.

A more recent HSC publication shows wide variation in hospital and physician payments within and across markets (Ginsburg 2010). The study examined eight health care markets, using data from four national insurers who reported their payment rates as a percentage of Medicare rates. Average payment rates in relation to Medicare for outpatient hospital services were generally higher than those for inpatient services, but within-market variation for outpatient hospital services was similar to that of inpatient hospital services. Variation in physician payment rates was not as pronounced but was still notable across and within markets and by specialty.

A study by Laurence Baker and his colleagues analyzed private-payer payment rates using 2007 MarketScan data (i.e., the data source we used in our analysis but for a prior

year) (Baker et al. 2010). The authors' preliminary findings reported variations in insurer payment rates across areas by type of service. There was less variation for office visits, for example, than for neck–spine–disk surgery (a frequent procedure in the study's commercial data). The surgery had about three times as much variation across areas as office visits. In examining several possible explanatory variables, the authors found that the MSA of the provider as a variable explained up to 42 percent of the variation (ranging from 18 percent to 42 percent for different codes). Among MSA-level factors that could explain the variation across areas, the authors found only one—the level of insurer competition in the market—to be significant. The MSA levels of education of the population, income, number of uninsured individuals in the area, and number of physicians per capita were not significant.

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## **Methodology for and limitations of our analysis**

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### **Data sources for our analysis**

Our preliminary analysis is based on commercial sector claims for 2008 from MarketScan (2008 Thomson Reuters MarketScan® Commercial Claims and Encounter Data, Copyright 2009 Thomson Reuters, formerly MedStat). The MarketScan data include primarily self-insured employer plans from across the country—including HMO, PPO, point-of-service (POS), and indemnity plans. Individual employers and health plans voluntarily contribute data to MarketScan, so the contribution rate varies by area and by plan type. The data do not identify the insurer or plan administrator, nor do they identify the provider or practitioner.

Overall, the 2008 MarketScan data are somewhat skewed by the greater contribution of data from the South. After trimming to remove extreme values at the high and low ends of the physician claims data—payments below one-third of the average or higher than three times the average for a specific payer type in each market—the MarketScan data contain more than 200 million claim line items for physician services, accounting for about \$18 billion in physician payments. (Trimming removes about 2.2 percent of physician claims and 1.6 percent of total physician payments.) Trimming hospital claims at the low end reduces the number of stays by about 3 percent and payments by less than 1 percent, resulting in more than

780,000 hospital stays and \$14 billion in hospital inpatient payments (Table 7-1, p. 168).<sup>1</sup>

Under the MarketScan licensing agreement, we are not permitted to report data for South Carolina except when they are aggregated to a larger geographic area. (For example, South Carolina data may be included in calculating a national average.) For some MSAs, MarketScan has too few payers contributing data to allow public reporting by area. As a result, we are unable to report specific hospital and physician information on 57 MSAs, of which 12 are in California and 11 are in Texas. In such cases, we are permitted by the terms of the data use agreement to combine areas in certain ways to report data.

We define payment rate as the plan's allowed payment for a particular service. Our definition includes any cost sharing required of a health plan member but excludes balance billing, the amount beyond the insurer-allowed payment that a non-network or nonparticipating physician or other provider can charge.<sup>2</sup> To the extent that an insurer pays a non-network provider a higher rate (e.g., an HMO paying for out-of-network or out-of-area care in an emergency), those higher payments are included in our data. In the physician data, less than 10 percent of total payments is indicated as non-network services.

We define the market area as an MSA or each single-state portion of an MSA. For example, the Washington–Arlington–Alexandria, DC–VA–MD–WV, MSA includes the District of Columbia and three separate state portions. This distinction is to allow for the state-based nature of the health insurance market, in which differences in insurers across states and differences in state regulations or rules applying to insurers and providers can affect payment rates. Given these parameters, our sample initially included 432 discrete metropolitan areas.

### **Calculation of payment rates for hospital services**

We define the payment rate for hospital services as an average payment per hospital stay in a geographic area. From the 432 MSAs and MSA state areas in our sample, we exclude areas with fewer than 200 hospital stays in 2008. After applying the hospital stay minimum criterion and excluding Maryland as an all-payer rate-setting state, our sample is reduced to 344 areas.

Payment rates for hospital services are calculated in three steps. First, in each area, the payment for each stay is adjusted by the diagnosis related group (DRG) weight for the stay, using the Medicare severity–DRGs (MS–

**TABLE  
7-1**

**Descriptive statistics for MarketScan claims data**

<b>Statistic</b>	<b>Inpatient hospital services</b>	<b>Physician services</b>
Number	1.2 million discharges	210 million claim line items
Total payments	\$14.4 billion	\$18.2 billion
Number of areas for aggregate data	1,030 (416 metropolitan areas; 570 micropolitan areas; 44 states' other non-metro areas)	1,030 (416 metropolitan areas; 570 micropolitan areas; 44 states' other non-metro areas)
Number of areas for area-level analysis	344 metropolitan areas	432 metropolitan areas
Distribution of dollars by plan type		
HMOs (including EPOs)	20%	14%
PPOs	64	72
POSs (capitated and noncapitated)	13	11
Indemnity plans	3	3

Note: EPO (exclusive provider organization), PPO (preferred provider organization), POS (point of service).

Source: MedPAC analysis of 2008 Thomson Reuters MarketScan® Commercial Claims and Encounter Data.® Copyright 2009 Thomson Reuters.

DRGs). Second, a portion of the payment (68 percent) is further adjusted for area-specific input prices, using the adjustment for the area wage index described in the Commission's June 2007 report, updated for 2008 prices (Medicare Payment Advisory Commission 2007). Finally, we calculate the relative payment rate for each area as the ratio of that area's adjusted average payment per hospital stay compared with the national adjusted average payment. (The national average payment rate is based on data from all areas, including areas with fewer than 200 stays and nonmetropolitan areas.)<sup>3</sup>

**Calculation of payment rates for physician services**

The set of physician services that we examine comprises items and services billed through the Health Care Common Procedure Coding System (HCPCS). HCPCS includes the American Medical Association's copyrighted Common Procedure Terminology (CPT-4) and additional codes developed by CMS. HCPCS is used by both Medicare and commercial insurers and health plans. The largest share of the commercial sector payments for physician services is for office visits—at about 30 percent—followed by imaging services.

Because there are thousands of services and their payment rates can vary in different ways, we constructed a summary measure or price index that captures the overall payment rate for a given area. First, we defined a market basket of physician services, consisting of about 160 HCPCS codes that represent a little more than 60 percent of total dollars for physician-billed services. Because the full set of possible codes includes many infrequently billed services—for example, some codes have only one instance of being billed in a particular geographic area or not at all—selecting a subset presents a practical compromise. The set of 160 services contains both the most frequently billed services and some infrequent, often high-payment, services.<sup>4</sup>

Second, we adjusted the payment amounts in the private-payer data for differences in practice costs faced by physicians across areas. We used a set of geographic adjustment factors at the core-based statistical area (CBSA) level developed by CMS.<sup>5</sup> This approach adjusts payments for physicians' input costs and does not reflect other factors that may affect how insurers set or negotiate physician payment rates. When the Commission examines regional variation across areas in Medicare expenditures, we make similar adjustments for the varying costs of doing business across areas. Such geographic adjustment

is intended to make prices comparable across areas and to control for factors that justifiably contribute to higher or lower prices.

Third, we weighted each service in the market basket by the share of national spending associated with each code and applied that weighting to the services in each area. This step was necessary to account for differences between a given area's distribution of services and the aggregate distribution of services nationwide.

We considered only HCPCS codes for which there are more than 30 claims in an area, although not all areas have more than 30 claims for each of the 160 codes in the market basket. Consequently, in many markets, payment data were missing for some of the codes in the market basket. In those cases, we imputed a relative price level by assigning a price ratio equal to the weighted average of the price ratios for the codes with more than 30 claims in the area.<sup>6</sup>

## Discussion of data and methodology

The MarketScan data and the methodology described above provide a large and rich source for analyzing private-sector payments. The database includes 1.2 million total hospital discharges and 210 million claim line items for physician services, capturing \$14 billion of hospital payments and \$18 billion of physician payments in the private sector (Table 7-1). However, our analysis contains several sources of potential bias.

Selective contribution of data to MarketScan by employers and plans results in a database that may not be a representative sample of the commercial market. Comparing some statistics from our data with those from other data sources suggests that this issue might be important. For example, at an aggregate level, the distribution by plan types in the MarketScan data is consistent with the distribution reported in the Kaiser Family Foundation (KFF)/Health Research and Educational Trust (HRET) 2008 Survey of Employer Health Benefits (Kaiser Family Foundation/Health Research and Educational Trust 2008). The KFF/HRET survey reports that about two-thirds of covered lives in large plans are enrolled in PPO-type plans: 58 percent are in PPOs and 8 percent are in high-deductible plans, which are generally on a PPO "platform." Analogous statistics in our data (recognizing the difference between covered lives and payments) are roughly similar: 64 percent of hospital payments and 72 percent of physician payments are from PPO claims. The distribution of HMO and POS plans is similar in the two sources.

However, there are notable differences in the distribution of plan types at the state level. For example, in the MarketScan data, 53 percent of total HMO payments to inpatient hospitals come from three states: California (33 percent), Texas (12 percent), and Georgia (8 percent). While the top placement of California might not be surprising given its historically high HMO penetration rate, the inclusion of Texas and Georgia is unexpected. Moreover, some states with traditionally high HMO penetration show very low shares of HMO payments in the state. In Oregon and Washington, only 3 percent of the state's hospital payments are from HMO claims, compared with 57 percent in California. These statistics suggest that we might not have a representational sampling of the privately insured market, and factors such as variation in the number of insurers providing data to MarketScan in a given market could affect our findings on payment variation within and across markets.

Our analysis is also sensitive to various adjustments made in calculating payment rates. For example, geographic adjustments for input prices—the area wage index for hospital prices and the geographic adjustment factors for physician practice expense—are intended to remove factors that likely vary from area to area. But they also change the relative payment rates across areas. Although these adjustment factors represent commonly accepted methods of geographic adjustment for input prices, one can disagree on the exact value of adjustment factors used in the analysis. For example, although input prices vary from one area to another within a state, our analysis of the data suggests that private-payer rates do not necessarily incorporate a specific adjustment to account for differing input prices. A given service may have a uniform payment rate in a state even when input prices vary.

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## Variation in private-payment rates by metropolitan area

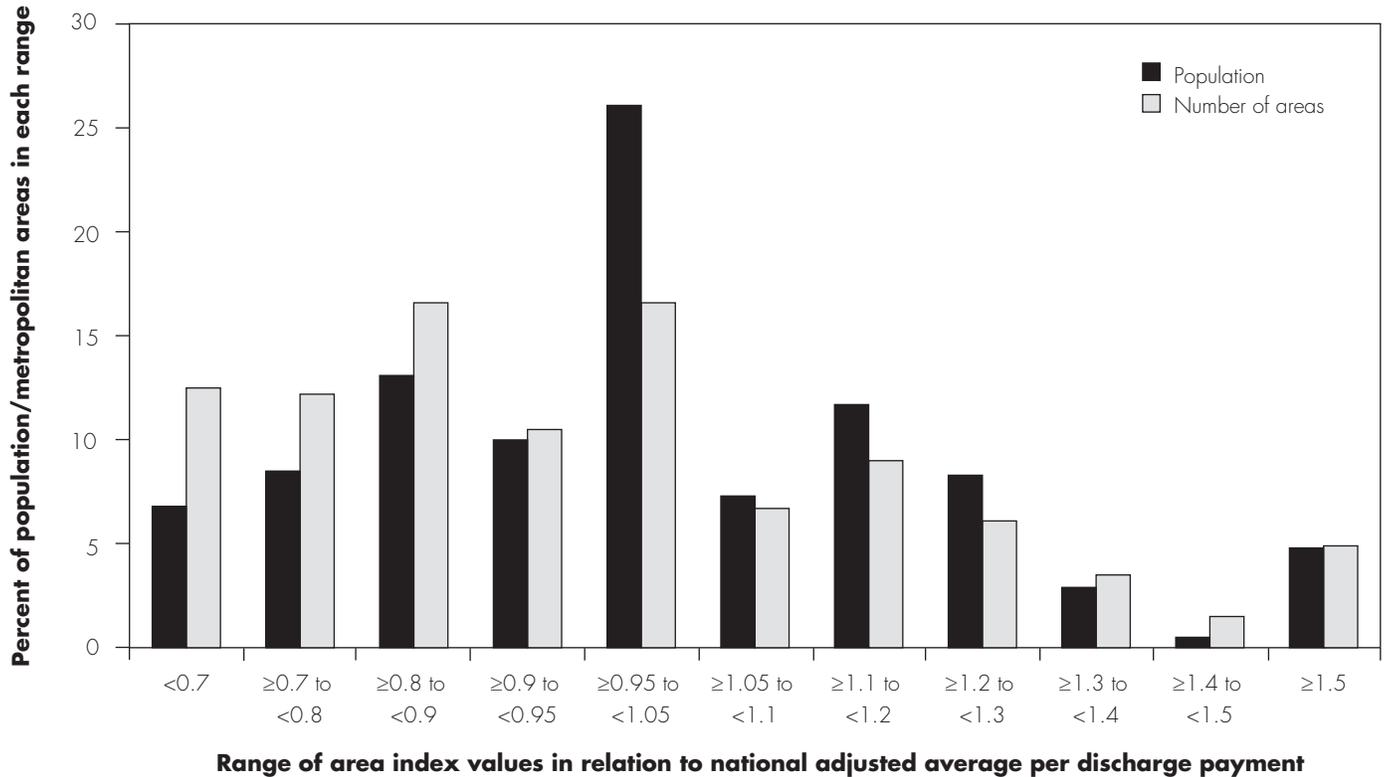
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### Variation in payment rates for hospital services

The results of our analysis are preliminary and subject to change. We find wide variation in private-sector payment rates for inpatient hospital care across metropolitan areas (Figure 7-1, p. 170). For the 344 metropolitan areas where at least 200 hospital stays occurred in 2008, the area-level index values—that is, the area's adjusted per discharge payments divided by the national average payment—range from 0.46 to 2.62, or a nearly sixfold difference between

**FIGURE 7-1**

**Average adjusted per stay hospital payments vary widely across 344 metropolitan areas**



Note: The population distribution reflects the total population in each of the areas.

Source: MedPAC analysis of 2008 Thomson Reuters MarketScan® Commercial Claims and Encounter Data.® Copyright 2009 Thomson Reuters.

the highest and the lowest values. In other words, the highest payment area has an average payment per stay that is six times higher than the lowest paid metropolitan area. However, the highest paid area is an outlier in that a large difference exists between its index value of 2.62 and the second-highest index value of 1.92. At the lower end of the distribution, the second-lowest index value (0.47) is relatively close to the lowest value (0.46). If we remove the highest and lowest area index values, the second-highest index value (1.92) is slightly more than four times greater than the second-lowest value (0.47). The ratio narrows to 1.9 when we compare the index value at the 90th percentile of values with the index value at the 10th percentile of values.

Among the 20 areas with the highest index values for inpatient hospital payments, 7 are in California and the rest are in 11 other states. Areas of Alabama, Illinois, and Michigan are among the 20 areas with the lowest index values.

Compared with the GAO study, which found an almost fourfold difference in hospital payment rates, our findings show higher variation in payment rates for hospital services. The ratio between the areas with the highest and the lowest relative payment rates in the MarketScan data is 5.7 (compared with 3.6 in GAO’s findings), and the ratio between the second-highest and the second-lowest relative payment rates is 4.1 (compared with 2.8 in GAO’s findings). Comparing the 90th and the 10th percentile index values for hospitals, the GAO ratio is 1.6, compared with 1.9 for the MarketScan data. For some geographic areas, our results, based on 2008 data, varied widely from GAO’s results, based on 2001 data. For example, in our analysis, all areas in California for which we had a sufficient number of hospital stays were higher in their relative payment rates than they were in the GAO study. (The two analyses are not entirely comparable: In addition to the difference in the time period analyzed—2001 data for the GAO study and 2008 for our analysis—the analyses also differ in data sources, the basis of the wage

**TABLE  
7-2**

**Metropolitan areas have slightly higher than average payments, but payments vary widely across states**

	<b>All areas</b>	<b>Metropolitan areas</b>
Number of areas	1,030	416
Number of stays	1,209,275	1,093,781
Average adjusted per stay payment	\$10,110	\$10,250
Average adjusted per stay payment, excluding California	\$9,730	\$9,850
Average adjusted per stay payment, California	\$14,480	\$14,490
Number of stays, California	95,764	93,851

Source: MedPAC analysis of 2008 Thomson Reuters MarketScan® Commercial Claims and Encounter Data.© Copyright 2009 Thomson Reuters.

index for hospital services, the number of MSAs included the study sample, and the definition of MSAs, owing to the difference in years studied. The case-mix adjustment would also differ because we are using MS-DRGs while the GAO report would have used an earlier version of DRGs.)

We also see that many of the highest paid areas have a substantial level of out-of-area utilization. Because we are determining area-level payments based on the location of the provider, not the patient’s residence, we define out-of-area care as care provided to patients who reside outside the hospital’s MSA or state area if the MSA crosses state borders. Out-of-area care may reflect border crossing from an immediately adjacent area, travel to a particular destination for specialized care or for care at an academic medical center, or travel to a prestigious institution.

We limited our area-specific analysis to metropolitan areas. Such areas have average payment levels that are higher than the national average across metropolitan and nonmetropolitan areas, as shown in Table 7-2. In the table, we use California data to show how payments can vary by state.

We have examined aggregate hospital payments in nonmetropolitan areas, defined as micropolitan areas, and other nonmetropolitan areas of each state. At the national level, our data show that nonmetropolitan areas have lower payment rates than metropolitan areas, but the relationship between nonmetropolitan and metropolitan payment levels varies across states. For example, in 11 states, average micropolitan area payments are higher

than those in metropolitan areas. In four of those states, and in an additional seven states, nonmicropolitan rural area payments are higher than the average metropolitan payment rate.

**Variation in payment rates for physician services**

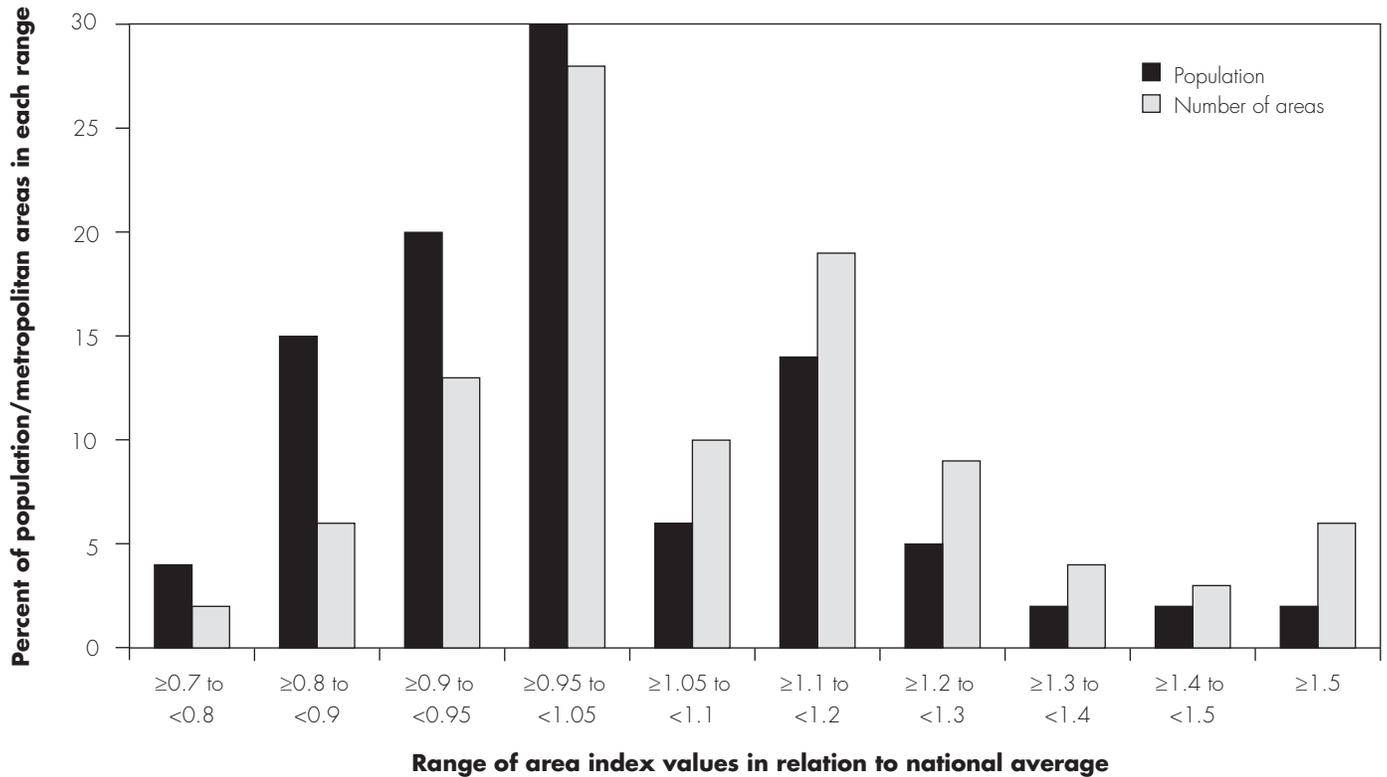
We find wide variation in private-sector payment rates for physician services across metropolitan areas, though not to the same degree as we find for hospital payments. The distribution of the physician payment index is shown in Figure 7-2 (p. 172). The input-price-adjusted index values range from 1.6 to 2.2 in areas with the highest index. At the other end of the distribution, the values range from 0.73 to 0.84. Comparing the index value at the 90th percentile with the index value at the 10th percentile, the ratio is 1.5 (lower than the hospital ratio of 1.9); 102 areas—nearly one-quarter of the areas and about 30 percent of the population—have an index value ranging from 0.95 to 1.05.

Among the 20 MSAs with the highest physician payment rates, 11 are in Wisconsin, 4 are in Oregon, and the remaining 5 are in various other states (including areas we cannot specify under the terms of the data use agreement). The 20 MSAs with the lowest payment rates are in Southern California, South Florida, the District of Columbia and surrounding areas, Maryland, New Jersey, Ohio, and Nassau-Suffolk, New York.

Across the 432 metropolitan areas in our sample, our preliminary estimate of the ratio of the highest to the

**FIGURE 7-2**

**Private-payment rates for physician services also vary widely across 432 metropolitan areas**



Note: There are no areas with an index below 0.7.

Source: MedPAC analysis of 2008 Thomson Reuters MarketScan® Commercial Claims and Encounter Data.® Copyright 2009 Thomson Reuters.

lowest index value is 3.0 (2.2 divided by 0.73). This value is higher than the ratio of 2.0 reported in the GAO study based on 2001 claims data across 319 metropolitan areas (Government Accountability Office 2005). However, in most cases, the areas with high physician payment rates in the GAO study (e.g., Wisconsin) or with low payment rates (e.g., Maryland) continue to fall in the same relative grouping in our data.

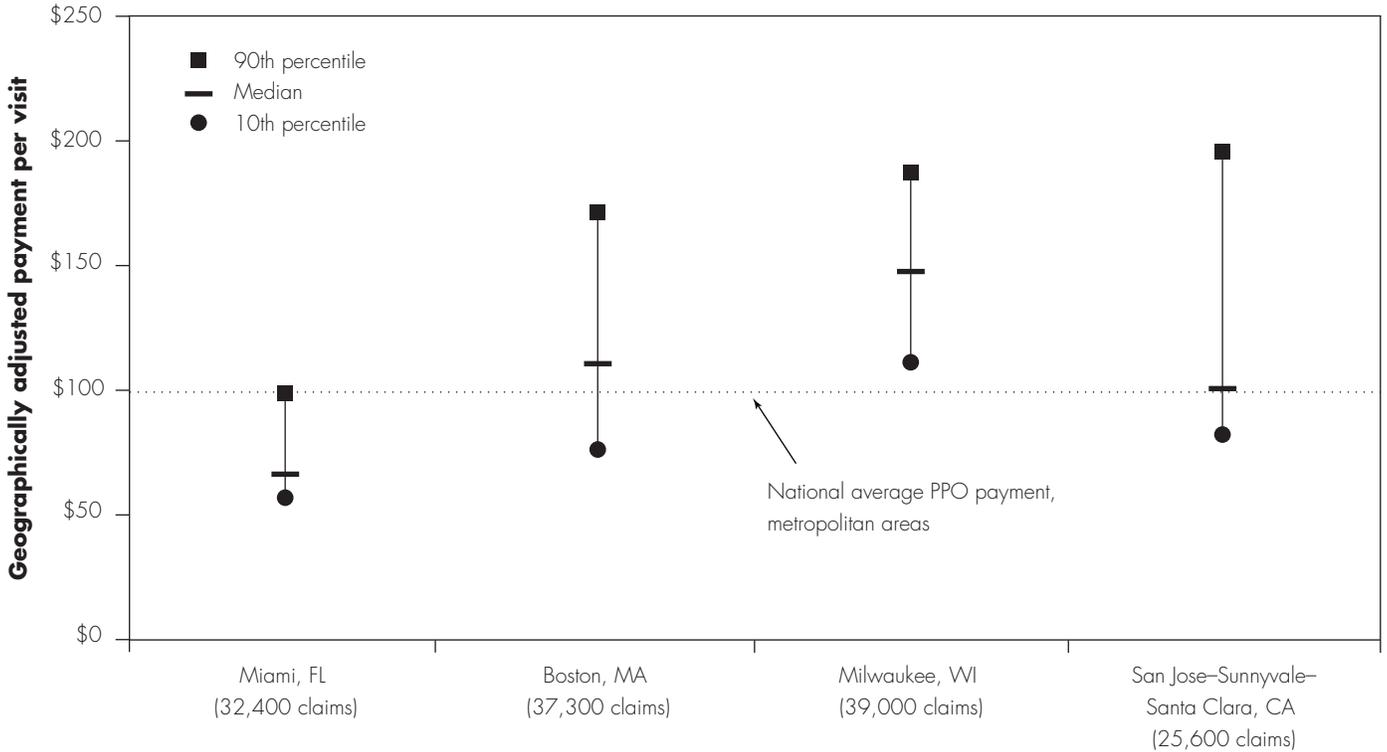
**Relationship between hospital and physician payment rates**

For the 344 metropolitan areas for which we calculated hospital payment rates, we do not find a strong relationship between these areas' hospital rates and their physician payment rates. Areas with relatively high hospital rates can have relatively low physician payments, and vice versa. About 40 percent of the population resides in areas where the index value for hospital payments is relatively high but the index value for physician payments

is relatively low. Also, about 10 percent of the population resides in areas where the relative index values for hospital and physician values are reversed (low hospital values and high physician values). The differences suggest that market conditions and dynamics between payers and providers for hospital care can be very different from those for physicians.

**Examining intramarket variation**

In some areas in our sample, we find evidence of considerable intramarket variation in physician payment rates. Intramarket variation has received more attention recently, in part because of the state attorney general's 2010 investigations in Massachusetts and recent HSC findings (Ginsburg 2010). Using the MarketScan physician data and other information about particular markets, we examined variation in physician payments within individual markets. Because the data do not provide the identity of insurers or administrators, or the identity of

**FIGURE 7-3****PPO payment variation across and within areas for a midlevel physician office visit in 2008**

Note: PPO (preferred provider organization). Dollar amounts are geographically adjusted for area input prices. Payments are for PPO plans in each area.

Source: MedPAC analysis of 2008 Thomson Reuters MarketScan® Commercial Claims and Encounter Data.® Copyright 2009 Thomson Reuters.

providers, the intramarket variation can be due to different insurers paying different amounts for the same service in an area, or it can be due to one insurer paying different providers different amounts for the same service. Other studies and other data we have examined suggest that the example we provide in Figure 7-3 does reflect payments that vary from one provider to another in the three markets with the widest variation (examples include the Massachusetts Attorney General’s findings regarding the Boston market (Attorney General of the Commonwealth of Massachusetts 2010) and the GAO description of the Milwaukee market as one with significant provider leverage in negotiations with insurers, “which limited insurers’ ability to control the prices they pay” in a geographic area with “highly consolidated provider networks ... that included both hospitals and physicians ... [with] established markets in separate geographic areas, each with loyal consumers” (Government Accountability Office 2004)).

Figure 7-3 shows the intermarket and intramarket variation across four metropolitan areas. The rates are geographically adjusted for a specific payer category (PPOs) for a specific service (a midlevel office visit, HCPCS code 99214—the second most frequently billed service in the private-payer data). The figure shows the median, the 10th percentile, and the 90th percentile of the payment rates for each area. In Miami, the median geographically adjusted payment rate is relatively low, and there is relatively less variation in the payment for this service. The three other markets shown have wider variation, and two markets have medians above the national average. In the San Jose market, for example, although half of the claims are paid at or below the national average, some claims are paid at more than twice the national average. In the Boston market, the median payment exceeds the national average, but some payments are below the national average. In Milwaukee, at least 90 percent of payments exceed the national average, and the median is well above the national average.

**TABLE  
7-3**

**Ratio of 90th to 10th percentile of payment across metropolitan areas**

10 service categories with greatest variation across MSAs			10 service categories with least variation across MSAs		
BETOS category		Ratio of 90th to 10th percentile	BETOS category		Ratio of 90th to 10th percentile
P8F	Endoscopy—bronchoscopy	3.97	P0	Anesthesia	1.69
M5D	Specialist—other	3.60	M2B	Hospital visit—subsequent	1.64
T1B	Lab tests—automated general profiles	3.47	M6	Consultations	1.64
I4A	Imaging/procedure—heart including cardiac catheter	3.11	M5B	Specialist—psychiatry	1.59
P5D	Ambulatory procedures—lithotripsy	2.96	P6C	Minor procedures—other (Medicare fee schedule)	1.59
T1D	Lab tests—blood counts	2.96	M1A	Office visits—new	1.55
T1A	Lab tests—routine venipuncture (non-Medicare fee schedule)	2.82	M1B	Office visits—established	1.53
I1D	Standard imaging—contrast gastrointestinal	2.63	P1G	Major procedure—other	1.51
T1C	Lab tests—urinalysis	2.52	O1B	Chiropractic	1.46
P1A	Major procedure—breast	2.48	O1G	Influenza immunization	1.42

Note: BETOS (Berenson–Eggers Type of Service).

Source: MedPAC analysis of 2008 Thomson Reuters MarketScan<sup>®</sup> Commercial Claims and Encounter Data. <sup>©</sup> Copyright 2009 Thomson Reuters.

### Physician payment variation by type of service

Additional analysis of the physician payment data shows different degrees of variation by type of service across areas. In general, on the basis of frequently billed HCPCS codes, we find that payment rates vary less for the following services:

- most categories of office visits,
- obstetric care and cesarean delivery,
- ophthalmology,
- chiropractic care, and
- some minor skin procedures.

In contrast, we observe large variation in payment rates across many lab test codes, heart echography, and other imaging related to heart procedures.

For each of the 74 service groupings in the midlevel Berenson–Eggers Type of Service (BETOS) classification system, we calculated a ratio of payment levels in each metropolitan area compared with the national average

payment. We then calculated the 90th percentile and the 10th percentile of those ratios for each BETOS category. Table 7-3 shows the 10 sets of services with the greatest and the least variation across metropolitan areas.<sup>7</sup>

There may be many reasons for the variation, or lack of variation, by type of service. For example, a flu vaccination is a standardized service and one might expect relatively small differences in payment rates. Table 7-3 shows little variation for the service, as expected. In contrast, lab tests are also standardized services, yet they show wide variation across markets. The nature of the service, the underlying economics of providing the service, and the manner in which providers are organized can affect the degree of variation in payment rates. In certain markets, single-specialty groups may be able to negotiate higher payments for services such as imaging and certain procedures, whereas in other markets those services may be provided in a more decentralized manner. We will continue to examine the variation by service category.

Not surprisingly, areas with high payment rates for the basket of physician services frequently have high payment rates for each service category. Table 7-4 reports how

**TABLE  
7-4**

**Many areas show either generally high or generally low payment levels across a wide range of BETOS service categories**

<b>MSA</b>	<b>Of 74 service categories, number where payment is at or above 90th percentile</b>	<b>MSA</b>	<b>Of 74 service categories, number where payment is at or below 10th percentile</b>
Eau Claire, WI	70	Bethesda-Frederick-Rockville, MD	58
Madison, WI	70	MD:Wilmington, DE-MD-NJ	57
(unnamed metro area: DUA)	66	MD:Washington-Arlington-Alexandria, DC-VA-MD-WV	56
WI: La Crosse, WI-MN	65	West Palm Beach-Boca Raton-Boynton Beach, FL	53
Green Bay, WI	64	Baltimore-Towson, MD	53
Appleton, WI	63	Akron, OH	47
Oshkosh-Neenah, WI	63	VA:Washington-Arlington-Alexandria, DC-VA-MD-WV	47
Janesville, WI	62	Fort Lauderdale-Pompano Beach-Deerfield Beach, FL	45
Rochester, MN	60	OH:Youngstown-Warren-Boardman, OH-PA	45
Wausau, WI	59	Canton-Massillon, OH	43
Sheboygan, WI	57	DC:Washington-Arlington-Alexandria, DC-VA-MD-WV	41
(unnamed metro area: DUA)	56	Edison-New Brunswick, NJ	39
Sioux Falls, SD	56	Vineland-Millville-Bridgeton, NJ	39
Milwaukee-Waukesha-West Allis, WI	55	Nassau-Suffolk, NY	38
Fond du Lac, WI	54	Oxnard-Thousand Oaks-Ventura, CA	35

Note: BETOS (Berenson-Eggers Type of Service), DUA (data use agreement).

Source: MedPAC analysis of 2008 Thomson Reuters MarketScan® Commercial Claims and Encounter Data. © Copyright 2009 Thomson Reuters.

many of the 74 BETOS categories are at or above the 90th percentile, or at or below the 10th percentile, for a given area. For example, Eau Claire and Madison, Wisconsin, have high payment rates for the physician market basket, and each area has high payment rates for 70 of the 74 BETOS categories. Conversely, areas with lower payment rates for the basket of physician services—such as Florida, Maryland, and New Jersey—also are areas with lower payment rates across service categories. For example, Bethesda, Maryland, has relatively low payment rates for 58 of 74 service categories.

Table 7-5 (p. 176) shows how the relationship among physician payments for particular types of services varies from one market to another by using the five major BETOS categories. Nationally, across the markets for which we have data, imaging accounts for 15 percent of physician payments. In Rochester, Minnesota, however, imaging accounts for 33 percent of total payments in the area (not shown in table). After substituting the national average payment rate for the local rate for each HCPCS code, the share of payments for imaging services remains

much higher than the national share, at 28 percent of total payments in Rochester. A possible explanation is that in Rochester, more than 90 percent of the payments for physician care in our data are for patients from areas outside the Rochester MSA. Those out-of-area patients may be more likely to receive diagnostic imaging and testing.

In the Miami market, the distribution of dollars by service category is about the same as the national distribution. Although payment rates are lower than the national average payment rates for all types of services, the relative payment rates across types of services are similar to those nationally. Therefore, the distribution across types of services remains similar despite the difference in the level of payment rates. (Given what we know about Medicare utilization in Miami, if it is a higher utilizing area for private payers, these data would suggest that high utilization of physician services is not limited to specific service categories but instead occurs across the board. The Miami data illustrate that Table 7-5 does not necessarily show the extent of service utilization in an area, nor does it necessarily show the intensity of services.)

**TABLE  
7-5**

**The share of payments for different service categories can vary widely across markets, even after adjusting for payment differences across types of services**

Major BETOS category	National share of payments	Adjusted shares of payment in each area				
		Rochester, MN	Miami, FL	Grand Junction, CO	Portland, OR	Santa Cruz, CA
I (imaging)	15%	28%	16%	9%	10%	15%
M (visits)	47	30	49	47	45	45
P (procedures)	26	30	25	32	34	28
T (tests)	7	11	5	4	5	5
O (other)	5	1	4	8	6	7

Note: BETOS (Berenson-Eggers Type of Service). For each BETOS category, a market's proportion of dollars is adjusted by the price index to determine the ratios that would exist if services were paid at the national average level. "O" (other) category is chiropractic care and flu vaccine administration. Figures may not sum to 100 percent due to rounding.

Source: MedPAC analysis of 2008 Thomson Reuters MarketScan® Commercial Claims and Encounter Data.® Copyright 2009 Thomson Reuters.

Notable about the Grand Junction, Colorado, and Portland, Oregon, markets is that imaging as a share of dollars in these two areas is one-third less than the national average, while procedures make up a larger share than the national average. These two areas have low Medicare service use rates, at 84 percent and 85 percent of the national average, respectively (Medicare Payment Advisory Commission 2011b). If service use is similarly low among private payers, the data in Table 7-5 may indicate that imaging and testing services are used judiciously in these areas, and the smaller share of the dollars for these services explains how procedures can make up a larger share of payments in these markets. Because we are looking at adjusted payments (payments as though they were made at national average levels), the lower share for imaging in these two markets indicates either that fewer imaging services are used, in general, or that the mix of imaging services tends toward lower priced services compared with the national distribution in this BETOS category.<sup>8</sup>

In Santa Cruz, California, the unadjusted share of dollars spent on imaging is 19 percent of the total dollars (not shown in table). Imaging payments in Santa Cruz average 1.66 times the national average, while payments for procedures in Santa Cruz average 1.19 times the national average (not shown in table). Adjusting the relatively high prices for imaging in Santa Cruz by computing the amount that would have been paid using national average rates (and similarly adjusting all other BETOS categories), the adjusted share of imaging in Santa Cruz equals the national average, at 15 percent. The Santa Cruz data illustrate that a market's higher payments for a given

category of services cause a larger share of dollars to be spent on those services, and in some cases (as in Santa Cruz) the higher share is primarily, if not entirely, due to the higher payments made for this category of services.

## Next steps

Our preliminary analysis of private-payer payments for physician services across metropolitan areas shows that there is noticeable variation in payment rates and that there may be even wider variation across areas for some types of services.

We will continue our analysis of physician and hospital payment rates in the private sector. We plan to examine particular markets in depth. Areas that have been studied by others (such as the communities studied by HSC) provide a valuable opportunity to test the validity and enhance our understanding of the analysis. We also plan to study areas that have not been examined extensively.

Although we have noted several potential limitations of the data set, a systematic, quantitative approach to the private payer claims data is useful. It allows for a consistent analytic approach across areas. Overall trends and patterns inferred from the data might not be clear, but our analysis can provide a broader context for understanding specific markets. Consequently, it would be an important companion piece to case studies of individual market areas.

Another component of our future work would be to examine alternative ways to measure market concentration or provider market power. Market concentration involving horizontal mergers traditionally has been measured with the Herfindahl–Hirschman index (HHI), and antitrust guidelines establish relative levels of concentration based on that index.<sup>9</sup> Some of the literature suggests that the HHI cannot be relied on exclusively as the measure of the effect on prices of a horizontal merger. It may be appropriate to use alternatives to the HHI, or some modification of the HHI, to measure concentration in health care markets. In addition, while the HHI measures concentration in horizontal mergers, we are not aware of a similar measure for vertical consolidation and its market effect (though there is some literature on this topic), nor does there appear

to be a measure or index that considers horizontal and vertical integration together in determining market power.

The Commission views the analysis of private-payer payment rates as important. As policymakers look for market-based solutions to the issues the Medicare program faces, it is important to understand the mechanisms at play in the private sector, including reasons for the variation in payments that we see across and within markets. Our work examining the variation in private-payer rates also informs our ongoing analysis of Medicare payment adequacy and our understanding of the factors that need to be considered in determining payment rates, such as input prices and the relative quality of providers as a source of variation in payments. ■

## Endnotes

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- 1 Trimming the physician claims is the same trimming we traditionally perform when we do the annual computation of Medicare–private-payment rates for physician services. MarketScan data are trimmed according to payer type (HMO, PPO) and geographic area. We believe this method is appropriate because we are trimming payments for specific Health Care Common Procedure Coding System (HCPCS) codes at a relatively small geographic level. We have also done spot checks using other data on private-sector physician payments to determine whether we see any pattern of payments falling outside the ranges that remain after trimming (e.g., ensuring that the highest payment for a particular HCPCS code that recurs in a different data set is not trimmed out in the MarketScan data). For the hospital data—for which we have far fewer claims per area than for many of the HCPCS codes—we trimmed only at the low end (\$500 or less) because it appears that some of the low-payment claims in the data may be for providers other than acute care hospitals. At the high end of hospital claims we decided not to trim because, unlike the physician claims, we are dealing with various methods of payment (diagnosis related groups, per diems, discounted charges) that make it difficult to determine a unit of payment to which trimming could be applied. In addition, the hospital data contain claims from all provider types, including those that can have very high payments (often reflecting long lengths of stay), such as children’s hospitals and hospitals specializing in cancer care. Aside from the trimming, we also removed claims for which there was coordination of benefits (e.g., another insurer) or for which the geographic area of the provider could not be identified. In the case of hospital claims, we removed claims for the state of Maryland, where payment is established under an all-payer rate system.
- 2 We do not know the balance billed amount for a claim. The MarketScan data do not contain information on the billed charge, and therefore we do not know the difference between the billed amount and the paid amount. Even when the difference between the billed amount and the insurer-paid amount is known, it is not always the case that the provider receives the full difference from the patient. Some or all of the amount may be written off as bad debt, or a patient could negotiate a reduction in liability.
- 3 For hospital services and physician services, to the extent that there are any capitated payments, we exclude such payments from our analysis, even when a fee-for-service equivalent is provided.
- 4 There can be a “site of service differential.” Often, but not always, the private-payer data show a different payment amount for the same service depending on whether it was provided in certain types of facilities rather than in a physician’s office. For example, we treat a facility-based service as a separate service from a non-facility-based service in our analysis of payment rates by service (the equivalent of viewing each as having a different HCPCS code). We do not include the separate payment to the facility in the payment total.
- 5 By coincidence, the CBSA factors applied to the private pay claims data for metropolitan areas are budget neutral. That is, across all areas the total of geographically adjusted dollars in the MarketScan data equals the total of unadjusted dollars paid by private payers. This result would be expected for Medicare payments, for which the adjuster was developed, but not necessarily for private-payer data. To use a simple example, payments made in areas with a geographic adjuster of 0.9 are evened out by payments made in areas with a geographic adjuster of 1.1, because the adjuster is based on relative cost factors in relation to the total expenditures, which is the national figure for expenditures (1.0).
- 6 Because payment rates for certain services are imputed, some of the variation that we see across markets may be due to our inability to price particular services. Our imputation assigns the average price ratio of services present in the market, but the actual price ratio of the missing services could be quite different from the average.
- 7 Because we are examining groups of services by area, rather than individual services (specific unique HCPCS codes), some of the differences across areas can reflect the different mix of services included in the groupings in different areas if the pricing of particular services (specific HCPCS codes) differs from the pricing of a different service (a specific HCPCS code) that falls within the same BETOS category.
- 8 It may also be the case that the lower share for imaging in Portland and Grand Junction is a function of procedures making up such a high share of payments in the area.
- 9 The HHI is calculated by squaring the market share of each entity competing in a market and summing the result. The index “approaches zero when a market consists of a large number of firms of relatively equal size. The HHI increases both as the number of firms in the market decreases and as the disparity in size between those firms increases. Markets in which the HHI is between 1,000 and 1,800 points are considered to be moderately concentrated, and those in which the HHI is in excess of 1,800 points are considered to be concentrated. Transactions that increase the HHI by more than 100 points in concentrated markets presumptively raise antitrust concerns under the Horizontal Merger Guidelines issued by the U.S. Department of Justice and the Federal Trade Commission.” (Department of Justice 2009).

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